Atty Dkt No. 81095611 (FMC 1654 PUS)

S/N: 10/605,136

Reply to Office Action of October 5, 2004

**Amendments to the Claims:** 

This listing of claims will replace all prior versions, and listings, of claims in

the application:

1. (original) A method for controlling activation of a power source of a hybrid

electric vehicle, the hybrid electric vehicle having a brake system, first power source, a second

power source, a motor connected to the first and second power sources, and a power transfer

unit connected to the motor and adapted to drive a vehicle wheel, the method comprising:

determining a vehicle speed value;

determining an operating state of the brake system; and

activating the first power source based on if the vehicle speed value and the

operating state of the brake system is less than a first threshold value and the brake system is

in a released condition, or if the vehicle speed value exceeds a second threshold value, or if

a third threshold value has been exceeded.

2. (original) The method of claim 1 wherein the first power source is an

internal combustion engine.

3. (original) The method of claim 1 wherein the first power source is a fuel

cell.

4. (original) The method of claim 1 wherein the second power source is a

battery.

5. (original) The method of claim 1 wherein the second power source is a

capacitor.

6. (currently amended) The method of claim 1 further comprising wherein the

step of determining an operating state of the brake system further includes determining whether

a vehicle brake is released if the vehicle speed value is less than the first threshold value;

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determining whether additional power is demanded if the vehicle speed value is greater than the first threshold value and less than the second threshold value;

activating the first power source if additional power is demanded or if the vehicle speed value is less than the first threshold value and the vehicle brake is released; and deactivating the first power source if the vehicle speed value is less than the first threshold value and the brake is engaged or if additional power is not demanded.

- 7. (currently amended) The method of claim [[6]] 1 wherein the step of determining whether additional power is demanded the third threshold value has been exceeded is based on a change in position of a gas pedal detected by a gas pedal position sensor.
- 8. (currently amended) The method of claim [[7]] 1 wherein the step of determining whether additional power is demanded the third threshold value has been exceeded includes determining a target torque value and a target power value, comparing the target torque value to a predetermined torque value, and comparing the target power value to a predetermined power value, wherein additional power is demanded the third threshold value has been exceeded if either the target torque value exceeds the predetermined torque value or if the target power value exceeds the predetermined power value.
- 9. (original) A method for controlling starting and stopping of an engine of a hybrid electric vehicle, the hybrid electric vehicle having an engine, a voltage source, a starter/alternator connected to the engine and the voltage source, a clutch disposed between the engine and the starter/alternator, and a transmission connected to the starter/alternator and adapted to drive a vehicle wheel, the method comprising:

comparing a vehicle speed to a first threshold value;

comparing the vehicle speed to a second threshold value;

determining whether a third threshold value has been exceeded;

determining whether a vehicle brake is released if the vehicle speed is less than the first threshold value;

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starting the engine if the vehicle speed is less than the first threshold value and the brake is released, if the vehicle speed is greater than the second threshold value, or if the third threshold value has been exceeded; and

stopping the engine if the vehicle speed is less than the first threshold value and the vehicle brake is engaged or if the third threshold value is not exceeded.

- 10. (original) The method of claim 9 wherein the third threshold value is indicative of a torque limit of the starter/alternator.
- 11. (original) The method of claim 9 wherein the third threshold value is indicative of a power limit of the voltage source.
- 12. (original) The method of claim 9 wherein the first threshold value is less than the second threshold value.
- 13. (original) The method of claim 9 wherein the vehicle speed is measured by a speed sensor located at the output shaft of the transmission.
- 14. (original) The method of claim 9 wherein determining whether the vehicle brake is released is based on a change in position of a brake pedal detected by a brake pedal position sensor.
- 15. (original) The method of claim 9 wherein determining whether the third threshold value has been exceeded is based on a change in position of a gas pedal detected by a gas pedal position sensor.
- 16. (original) A method for controlling starting and stopping of an engine of a hybrid electric vehicle, the hybrid electric vehicle having an engine and a voltage source connected to a starter/alternator, a transmission connected to the starter/alternator and adapted to drive a vehicle wheel, the method comprising the steps of:

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comparing a vehicle speed to a first threshold value and a second threshold value;

determining whether a vehicle brake is released if the vehicle speed is less than the first threshold value;

determining whether a third threshold value indicative of a torque rating of the starter/alternator or a fourth threshold value indicative of a power rating of the voltage source has been exceeded;

starting the engine if the vehicle speed is less than the first threshold value and the brake is released, if the vehicle speed is greater than the second threshold value, or if the third or fourth threshold values have been exceeded; and

stopping the engine if the vehicle speed is less than the first threshold value and brake is engaged or if the third or fourth threshold values are not exceeded.

- 17. (original) The method of claim 16 wherein the step of starting the engine includes engaging the clutch.
- 18. (original) The method of claim 16 wherein the step of stopping the engine includes disengaging the clutch.
- 19. (original) The method of claim 16 wherein the step of determining whether the vehicle brake is released is based on a change in position of a brake pedal detected by a brake pedal position sensor.
- 20. (original) The method of claim 16 wherein the first threshold value is less than the second threshold value.

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## **Amendments to the Drawings:**

The attached sheet of drawings includes changes to Fig.1. This sheet, which includes Fig. 1, replaces the original sheet including Fig.1.

Attachment: Replacement Sheet